

WHAT IS CLAIMED IS:

1. A step motor comprising:  
a rotor having four magnetic poles;  
a first magnetic pole magnetically excited by a  
5 first coil;  
a second magnetic pole magnetically excited by a  
second coil; and  
a third magnetic pole magnetically excited by the  
first coil and the second coil;  
10 wherein a gap D between the third magnetic pole  
and the rotor is larger than a gap d between the first  
magnetic pole and the rotor and the gap d between the  
second magnetic pole and the rotor, so that a magnetic  
attraction is generated between a pole of the rotor and  
15 the first magnetic pole and between another pole of the  
rotor and the second magnetic pole.

2. The step motor as claimed in claim 1,  
wherein:

20 the rotor has a shape of cylinder;  
a stator having a plan view of substantially  
lateral U-shape is arranged to face a circumferential  
surface of the rotor;  
the first magnetic pole and the second magnetic  
25 pole are provided on both ends of the stator; and  
the third magnetic pole is provided in the center  
of the stator.

3. The step motor as claimed in claim 2,  
30 wherein:

the first coil is provided between the first  
magnetic pole and the third magnetic pole and the  
second coil is provided between the second magnetic  
pole and the third magnetic pole; and

35 the stator includes protrusions for preventing  
displacement of the first coil and the second coil.

4. A camera driving mechanism comprising:  
a step motor;  
an engagement pin that is connected to a rotor of  
the step motor and performs a turning motion within a  
5 given range; and  
an engagement hole that is engaged with the  
engagement pin and includes a sector that moves between  
a position to close an opening for image capturing and  
another position to open the opening for image  
10 capturing, in accordance with the turning motion of the  
engagement pin,  
the step motor includes:  
a rotor having four magnetic poles;  
a first magnetic pole magnetically excited by a  
15 first coil;  
a second magnetic pole magnetically excited by a  
second coil; and  
a third magnetic pole magnetically excited by the  
first coil and the second coil;  
20 wherein a gap D between the third magnetic pole  
and the rotor is larger than a gap d between the first  
magnetic pole and the rotor and the gap d between the  
second magnetic pole and the rotor, so that a magnetic  
attraction is generated between a pole of the rotor and  
25 the first magnetic pole and between another pole of the  
rotor and the second magnetic pole.

5. The camera driving mechanism as claimed in  
claim 4, wherein the sector includes a shutter blade  
30 and a diaphragm blade.